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ABSTRACT

Designed for incoming Lane Community College (LCC) students who may not know how to study effectively, this set of 15 short tips draws from the literature on cognitive psychology to offer guidance in the development of study skills. First, background information on the development of the guide is presented, along with responses to objections to its use, hints for writing similar aides, and an explanation of unusual study tips. Next, the 15 study sheets are presented. They are entitled: (1) Some Basic Study Methods; (2) Some Basic Ways to Memorize; (3) Memory Tricks--Similarities, the Link, and the Keyword Method; (4) Thinking--The Only Shortcut to Learning; (5) What to Do When You Don't Understand What You Are Reading; (6) How to Teach Yourself Physical Skills--The "Mist-Stars" Method; (7) How to Take Good Class Notes; (8) How to Create a Positive Attitude and Stop Procrastinating; (9) The Care and Feeding of a College Student; (10) Personal Failure, Worry and Self-Acceptance; (11) How to Take Objective Tests and Get the Highest Score Possible; (12) How to Plan Your Time So That You Can Get Your Homework Done; (13) What Most Instructors Expect Their Students to Do; (14) How Students Succeed in College--Despite Having Reading Skills That Are Below Average; and (15) What Is Intelligence? How Can You Raise Your Own Intelligence? (EJV)

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A NEW IMPROVED SET OF 15 ONE-PAGE STUDY TIPS GIVES MODERN HOW-TO-STUDY INFORMATION TO COMMUNITY COLLEGE STUDENTS

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Lane Community College
June 30, 1988

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A NEW IMPROVED SET OF 15 ONE-PAGE STUDY TIPS GIVES MODERN HOW-TO-STUDY INFORMATION TO COMMUNITY COLLEGE STUDENTS

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June 30, 1988

OVERVIEW

Lane Community College provides a set of 15 one-page two-sided study tips to students. We want to reach incoming students who may not know how to study and who may never take a course on effective studying. The current version is substantially revised from the earlier set published in ERIC in approximately 1982 as ED 219 120.

Here is the list of topics:

1. Some Basic Study Methods
2. Some Basic Ways to Memorize
3. Memory Tricks Can Make Schoolwork Easier: Similarities, the Link, and the Keyword Method
4. Thinking: The Only Shortcut to Learning
5. What to Do When You Don't Understand What You Are Reading
6. How to Teach Yourself Physical Skills: The "MIST-STARS" Method
7. How to Take Good Class Notes
8. How to Create a Positive Attitude and Stop Procrastinating
9. The Care and Feeding of a College Student
10. Personal Failure, Worry and Self-Acceptance
11. How to Take Objective Tests to Get the Highest Score Possible
12. How to Plan Your Time So That You Can Get Your Homework Done
13. What Most Instructors Expect Their Students to Do
14. How Students Succeed in College -- Despite Having Reading Skills That Are Below Average
15. What Is Intelligence? How Can You Raise Your Own Intelligence?

BACKGROUND AND HISTORY OF THE PROJECT

In 1979 I changed jobs. I was appointed Coordinator of the Testing Office at Lane Community College. Since I had taught sociology and social psychology until then, I needed to give myself a crash course in testing. So I read intensively for quite awhile in testing textbooks, reviews of major tests, and journals. As I read I kept looking for information that pertained to the problem of how to increase student retention and prevent dropouts. Sadly, I discovered that placement testing, though helpful, had quite limited benefits. Likewise, I saw that personality and attitude assessments had limited utility for identifying dropout-prone students. Furthermore, as the years went on I confirmed for myself that our testing at Lane, though somewhat beneficial, still left a lot to be desired in increasing student persistence.

About this time I became aware of the great strides that cognitive psychology was making in understanding learning, memory, thinking, problem-solving, and other topics that interested educators. It looked like a hopeful prospect for finding principles that students could use to increase their study effectiveness and their academic achievement. I also read some of the material available in books used to teach study techniques. It was reasonably good, but was substantially behind the new knowledge available in cognitive psychology. It was also clear that comparatively few students, out of the thousands that take courses at Lane Community College, would ever take our Effective Learning course or read books on how to study.

So in order to disseminate good how-to-study information and perhaps increase student achievement and retention, I decided to write a set of one-page study tips. Using books, articles, and input from teachers, I wrote the original set of tips over a period of a year or so in 1980 and 1981. I chose to make them one-page (some were two-sided) and display them in brochure racks. It seemed to me then, and still does now, that people are willing to read something that seems short and easy to read. They resist longer things. Moreover, people take free things and resist things that cost money. We know that many community college students are present-oriented, hedonistic, and distractible. So we made the tips free, reasoning that even if only two or three students a year learned enough to prevent them from dropping out they would pay enough in tuition to repay our printing costs. So when LCC staff members suggested a pamphlet or book, I resisted, fearing that the readership would diminish. And I wanted to have as many students as possible get this information. Naturally, many students took the whole set and read as much as a long pamphlet.

The results have been interesting. We have distributed 1500 to 2000 of each title yearly. The counselors frequently recommend them to students. Gradually, instructors have become aware of them. Some of them required their classes to read them, some even made assignments that students should pick one and use it and write a reaction paper about its results. The Testing Office staff became aware of this on the days when a number of students made raids on our rack and the number diminished. We would figure out who the teacher was, offer to provide the white masters to the department involved, and have them reprint them. Thus the Counseling Department saved money. Several departments now have the masters and reprint the ones affecting their students. For example, the Dental Hygiene students particularly need the material on learning physical skills and take that tip plus other material I've prepared for them. Other departments are especially interested in anxiety and test preparation and note-taking. They have also led to invitations to speak on study skills to classes from time to time.

Gradually, some teachers are becoming clearly aware that students can improve study skills. They are switching away from the belief that any students who fail are dumb. They are aware that studying is a learnable skill. In addition, some of them read the study tips and pass on the information to their students.

As time went by, I kept reading more cognitive and motivational psychology and discovering more things. The original version grew outdated. So last

year I embarked on a revision. It was difficult to compress material into the one-page two-sided format, and I had to make many compromises. Although I have included most of the important principles, I have left out lesser principles. I have not always had space to describe examples.

But the advent of micro-computers and word-processing had transformed my writing habits since 1981. It made it possible to use columns easily and create a more readable and attractive format. It also let me revise and revise and revise, so that I didn't tolerate some of the sloppy wording that I permitted in the earlier version.

OBJECTIONS TO THEM

Some of our staff have rightly pointed out that most students learn very little unless they are given verbal instruction and practice. Also many people will read them, not review them, and not recognize situations in their studying where the use of a technique will be helpful. Moreover, the writing style is compact, a lot of information is put in a short space, and there are examples only sometimes. Consequently, the critics predict that few students would learn much from the study tips.

I'm more hopeful than that because this is information that people can use. Moreover, the set of tips massively makes the point that students have to work and to persist. It stresses that it's not enough just to read and underline. If students just learn that, it will help.

But my ultimate justification is this: If I don't make them available, then there is no opportunity at all for students who might need them. But by making them available, we provide a chance for students to learn this valuable information. At least it's there. And I do know from hearing student comments over the years that many people read them and learn to do things that make them study better.

I recommend that the staff at other colleges consider providing their own how-to-study information in many formats. It should be readily available to students in a number of formats: pamphlets, books, posters, and oral information from knowledgeable instructors. It pays off in student success.

SOME TRICKS IN THE WRITING

Some educators may wish to write their own study tips and be curious as to what methods in the writing stand out. I have used various techniques in the writing that are designed to have some impact. I haven't always been consistent, but the interested reader can often spot them. Some of them are listed below.

1. Since limited space forced me to compress and since readers are used to loose writing that has a lot of redundancy, I have used various techniques to make the individual points stand out. I needed to make readers separate the various suggestions and to prevent them from blurring suggestions together.

-- Lead-in outlines that are boxed. They hit the main points.
-- Sub-headings to display major points.
-- Numbered points.
-- Bullets (little o's with the hole filled in).
-- Short paragraphs.
-- Two spaces between paragraphs.

2. I tried to make the general point that any methods people use will produce certain results. These suggestions are based on psychological "laws". They derive from the nature of the human brain. So I often used cause-and-effect language. The cause comes first in the sentence and the effect comes second. For example, this sentence from Tip #1 fits the pattern: "When you successfully remind yourself and arouse memories, your brain will automatically link the new information you take in today with the past learning."

3. Because people often don't believe that people's suggestions are worthwhile, I constantly tried to give reasons why suggestions worked. This was difficult because of my limited space. I would often say, "Do X because it will cause Y." Or I would say, "Do X because of the general principle that X leads to Y."

4. In order to promote clarity, I often gave both a positive statement and a negative statement. For example, in Tip #1 on the recommendation to preview the material, I closed by saying "It's dangerous to skip the preview." Then I explained why. When giving commands, I might say, "Do X. Don't do Y."

5. In order to head off poor habits, I often named a common ineffective behavior and said they shouldn't do it. For example, in Tip #2 I recommended that people review what they learned. But since people often just <u>reread</u> instead of testing themselves, I specifically mentioned rereading and gave a reason why it was a weak method.

6. I often used the language of purpose, goal, intention. When people do a practice <u>in order to reach a goal</u>, they can monitor their progress better. They become self-directed. Also people who read about the purposes of the methods are likely to be more persuaded that the methods are worthwhile, despite the time and effort they take.

7. I also tried to use normal techniques to make writing readable: short words, familiar words, short sentences, short paragraphs, active voice, people words (I, you, he, she, they, people, etc.).

8. I used commands frequently. "Do this." "Don't do that." Often the <u>do</u> and the <u>don't</u> are paired. Commands are reassuring as long as they are not obnoxious and have a reason behind them. Although sophisticated readers know that varied situations can make any behavior useful sometimes, it is helpful to read a general rule expressed as a clear simple order. And I expect that many of my readers expect a certain amount of authority in the writing. So I wanted to avoid an academic, tentative cautious style of writing.

EXPLANATION OF THE UNUSUAL STUDY TIPS

Tip #4, "Thinking: The Only Shortcut to Learning", may seem overly bold to some readers. It is in fact based on the principle of elaborated processing. Psychologists call it the most powerful memory principle of all. When people think over ideas and relate them to other ideas, they build powerful memory links to the new ideas. Readers can trust this study tip. I wanted to describe some of the many ways that people can think effectively about new information, because many students think in very limited ways.

Tips #8, #9, and #10 deal with attitudes. They attempt to help students fight their negative attitudes and build positive ones. These three tips have suggestions that are derived from well-established psychological and sociological findings about what makes people persist in the face of discouragement. Readers will recognize expectancy-value theories, perceived self-efficacy theory, operant conditioning theory, attribution theory, the theory of psychological reactance (people rebel if they feel a choice is being taken away), the power of primary groups in supporting people, and more.

Tip #9 is perhaps the most unusual. It is called "The Care and Feeding of a College Student." It is intended that students actually give this tip to one of their friends or to some significant person in their lives. It is based on the research from various sources that shows the powerful influence that people's friends have on them. People whose friends believe in them are much more likely to persist at difficult tasks. And going to college is one of those hard tasks. The suggestions in the tip derive from standard psychological findings about what makes people willing to persist under pressure. Hopefully, students' families and friends will learn to be helpful to them in the difficult spots.

Tip #10 is also unusual. It is called "Personal Failure, Worry, and Self-Acceptance." It is designed to help students shift their sense of personal responsibility for the normal troubles that happen in school to the situation itself and away from their personal inadequacies. It also attempts to help students break the deep conditioned response that links little daily failures to their deeply abiding inferiority feelings.

Tip #13 on instructors' expectations of students is an attempt to communicate some of the social norms of college to students. Many students are used to high school ways. Others are adults returning to college after many years. They often don't understand how instructors think, nor do they understand some of their rights as students. This tip discusses freedom, homework, questions in class, visiting faculty offices, notetaking, keeping up with homework, and being an active learner.

Tip #15 is on exercises designed to raise intelligence. This has some overt and some covert purposes. Overtly, it tells students some things they can do to increase their ability to perceive relationships among abstractions, an essential quality of intelligence. Covertly, it communicates the message that intelligence is a matter of skills and that the skills can be increased.

It subtly challenges many students' view that they are dumb, were dumb, and will stay dumb.

YOU MAY ORDER SETS OF STUDY TIPS

If the study tips would be useful at your college, you are welcome to borrow from them, adapt them, or copy them with or without attribution. If you want a set of our masters, write to ERIC and pay their fee or write to us and send $2 to cover our costs, and we'll send a set of masters. However, note that there are frequent references to Lane Community College in them and you may wish to rewrite those parts.

Write to: Testing Office
Lane Community College
4000 East 30th Avenue
Eugene, OR 97405

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Assessment and Testing

SOME BASIC STUDY METHODS

OUTLINE OF BASIC STUDY METHODS

1. Set your goal to learn.
2. Pay attention to your work.
3. Warm up your mind. Start thinking about the subject before you read and study.
   --Review 3 to 5 minutes.
   --Preview the material and find the themes and big patterns.
   --Set goals. Ask questions. Search for answers.
4. Use the distributed study method.
5. Plan to read, study, and memorize.
6. Mark your book.
7. Memorize important material.
8. Test yourself.

SET YOUR GOAL TO LEARN

Set a goal of learning when you read and study. What you want affects what you do while studying. And what you do affects what you get for results.

Don't set another goal than learning because your mind will try to get what you want. Many people really do set other goals. When they are in a hurry, they secretly set the goal to finish fast. When they dislike a subject, they set the goal to escape the work. They think they are trying to learn, but they aren't.

Don't be obsessed with working fast and being perfect. Give up all concern with thinking how you look to other people, with wondering how smart you are, or with avoiding mistakes. People who judge themselves are secretly setting other goals than studying -- namely, goals to act perfectly and to punish themselves. They learn less.

Accept mistakes. Everyone makes them. When you make one, correct it quietly.

PAY ATTENTION TO YOUR WORK

When you work, concentrate on it.

When your attention wanders away and you think of something else, then quietly call your attention back and concentrate again on your work. After your mind has wandered, return to a place one or two sentences before where you were. The purpose is to refresh your working memory for the information you need.

Do not waste time criticizing yourself because it causes your mind to wander again. Just quietly return to your work.

People who pay attention increase their learning because they spend more total thinking time on their subject. Since their attention is mostly on their subject, they also prevent forgetting what they are working on.

WARM UP YOUR MIND: START THINKING ABOUT THE SUBJECT BEFORE YOU START STUDYING

1. Review before you study. You should spend as much as five minutes leafing through past reading, class notes, and homework problems. Read slowly enough to see topics and key sentences here and there. Don't read everything.

Your goal is to remind yourself of what you were thinking when you studied last. When you successfully remind yourself and arouse memories, your brain will automatically link the new information you take in today with the past learning. And the links create memory!

2. Preview the material. Try to find out as much as possible about today's reading before you read it closely. Search in the table of contents, index, preface, summaries, bold face headings, and key paragraphs.

Your goal is to see the overall picture so that you can fit the new information into it. You want to know the general story. It will increase your memory. You want to see the overall patterns before you study individual facts.

It's dangerous to skip the preview. People who plunge into reading from the first page get confused. They see all the details and find it hard to integrate them.

3. Try to set goals for your reading that match your needs. When you are going to read a chapter for the first time, think about (1) your teacher's instructional goals for you and (2) wanting to understand the reading. Ask yourself questions that are appropriate. Get yourself in the mood so that you can search for answers. Reading feels different--more alert--when you are searching for something.

For your second or third reading, you will switch goals. You will want to study the material slowly in order to see relationships and remember it.

OVER ------>

USE THE DISTRIBUTED STUDY METHOD

Study a subject frequently in short sessions of an hour or so. Study or review the same material again in the later sessions. Short sessions cause efficient learning.

Don't let long gaps of more than 2 or 3 days separate your study sessions.

Avoid studying for long sessions that are separated in time, because you will forget too much and need to review too much. You will actually need to study a longer total time to learn the same amount of material.

PLAN TO READ, STUDY, AND MEMORIZE.

You should expect to read once for understanding and to read later in order to study parts of the material that you want to memorize or to clear up.

People who read their books only once and who don't study usually have trouble remembering details, definitions, lists, and complex facts. One reading is sometimes enough to let you pass a multiple-choice test that depends on recognizing the right answer. But one reading, without studying, is not usually enough to handle a test that requires recalling and producing complex details.

People who expect that their reading alone will create enough memory usually have many problems: They forget details; they cannot remember lists of things; they forget material which has several parts; they often confuse similar ideas.

When you see important information, you should memorize it intentionally and should test yourself to make sure you have got it. You can choose any one of several methods. They are described in several of the Study Tips in this set.

MARK YOUR BOOK ON THE FIRST READING.

Mark your book in places where you want to return and study material. Mark during your first reading, when you read for understanding.

Your purpose is to make it easy for yourself when you study so that you can quickly find what you want to memorize.

You can underline, if you wish, but you don't need to. Making a check in the margin is enough. If you read a book that's not yours to mark up, then write notes and page numbers.

TEST YOURSELF TO CHECK YOUR LEARNING

After you read, study and memorize, you should test how well you understand and remember the material. Many students study too little or too much because they do not know whether they have met their goals. Self-tests tell you when to rest.

- Test yourself for understanding what you read. The basic way to test if you understand ideas is this: Translate what you have read into your words, your own mental images, specific examples. While you read you should notice if the material is producing clear meanings.

- Warning: When you read a book, your mind will give you a familiar feeling of recognition for words that you know. That recognition feeling is not understanding. It is a fairly shallow signal that our brains send us to let us know that we have seen or heard some of those ideas before. You should make deeper tests for understanding by translating the ideas.

- Test yourself for memory. The self-test does two things:
  (1) It lets you know whether you need to study some more,
  (2) And doing a self-test increases memory because your act of self-testing requires you to practice recalling information. And practice builds memory.

- Warning: As you read and study material, it will stay fresh and familiar in your mind for a few seconds or a few minutes. It will seem that you know it and can remember it. But don't be fooled! It can fade. It's not long-term memory.

- Here is the real way to test for long-term memory: After you try to learn something, let some time pass. Let it grow a little cold in your memory. Then try to recall it. If you can recall "cold information", your memory passes the self-test.

WARNING TO THE READER

Already your memory for these suggestions is fading away. And even if you remember these suggestions, you need to practice them in order to build up new good study habits. So wouldn't it be a good idea for you to keep this study tip, reread it, and practice?

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SOME BASIC WAYS TO MEMORIZE

OUTLINE ON MEMORIZING

1. Link new ideas to familiar ones.
2. Notice similarities and differences.
3. Search for what's new, unexpected and meets your goals.
4. Teach yourself and test yourself. Look at a fact, think of a logical question, look away, ask the question, recite your answer, look back and compare, and test yourself again.
5. When studying a lot of material, build sets of newly learned facts one-by-one.
6. When learning new concepts, memorize a vivid example.
7. Use memory tricks when it's difficult to memorize naturally.
8. Review after a short period of time.

TAKE NEW INFORMATION AND LINK IT TO FAMILIAR IDEAS

After you read or hear a new idea, search your memory for other ideas that you naturally link it to. Go back and forth in your mind between the new and the familiar ideas. Think deliberately about how they are related. You have a lot of choices.

People remember facts that they have associated to other facts. They forget ideas that stand alone.

The only shortcut to learning is thinking. Think about new information. Notice the ways it relates to other things that you know. Explore it and meditate on it. This advice is the most important, because your memory grows from links between ideas. Most of the rest of this study tip will explain how to link new information to familiar knowledge.

NOTICE SIMILARITIES AND DIFFERENCES

When you want to remember a new fact, notice whether it reminds you of anything similar. That creates a link, and the link creates a memory.

Example: My wife once noticed that the name of Faye, a waitress, was the same as one of my aunts. Months later, she saw the waitress, thought of my aunt and her name, and recalled Faye's name.

Example: One student learns concepts by finding other concepts that are partly similar and partly different. Then he consciously focusses on the differences. That builds his memory and makes him keep complex ideas separated.

Example: A student finds an idea in a book, looks for a related idea, then looks back and forth at them, noticing how they are similar and different.

Students who think about similarities and differences remember so much that they can often skip the need to memorize things. A history student said it was his main method of learning. He read, for example, about a certain war and let himself think how it resembled and differed from a war at a different time.

NOTICE WHEN IDEAS ARE NEW, UNEXPECTED AND MEET YOUR GOALS

- As you read, think about whether facts are new to you or are already familiar. Search on purpose for what is new about a book. Of course, don't skip the familiar material. You should read it. But add the goal of noticing what's new.
- As you read, notice what is unexpected. Many times information will surprise you, go contrary to your beliefs. Notice it.
- As you read, search the book for information that meets your learning goals. Notice them. Say to yourself, "That's what I'm looking for!"

People who notice that material is new or unexpected or meets their goals will increase their memory for it.

TEACH YOURSELF AND TEST YOURSELF.

When you find specific facts or ideas that you want to remember, use this method.

1. Read the fact carefully so that you understand it and it is meaningful to you.
2. Then stop reading, think of one or more logical questions that this idea is an answer to, and do the next 4 steps (numbers 3, 4, 5, and 6).
3. Look away from your book.
4. Ask yourself the question.
5. Say the answer to yourself clearly.
6. Check the book or your notes and compare what you said to what the real information is.
7. Repeat steps 3, 4, 5, and 6 until you get the fact right several times.

Notice the key steps: You actively recite the information, you link the information to a question, and you compare your answer to the right answer. These ingredients are essential.

OVER ----->

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The purpose for asking a question first is to tie your fact to another thought. Remember: When you take a test, you will also see questions and must recall answers.

WARNING: It will seem so easy to recite the answers to your questions that you will falsely think you are not learning anything. But you are. And the point of this method is to make learning easy. It works.

BUILD SETS OF INFORMATION BY STUDYING THEM ONE-BY-ONE AND ADDING THEM TO THE SET

Study many related pieces of information by adding them into sets of facts.

Follow these steps.

1. Learn one fact. Test yourself.
2. Learn a second fact. Test yourself.
3. Go back and forth between the first and second facts until you understand their differences and know them both.
4. Now learn a third fact and test it.
5. Return to the first two facts and check them. Check the third fact. Keep working until you know all three facts.
6. Now add a fourth fact. Learn it and integrate it into the set of four facts.
7. Keep adding facts, one at a time, to the growing set of facts. When you reach 10 to 15 facts or come to the end of a logical group, start again with a new set.

This method works well. One psychologist told his teenage son about the method, and the boy immediately used it to study German. He told his father that he learned his words faster than ever before and could remember all of them for the first time.

Note: Do not study all 15 facts separately before you review them. That has bad results, because you will forget the first facts before you review them.

WHEN LEARNING DEFINITIONS OF NEW CONCEPTS, MEMORIZE A TYPICAL EXAMPLE, TOO.

Study 3 things when you try to learn new words: the words themselves, the definitions, and good typical examples. Try to see the examples in your mind.

Here is an example of learning an example: Suppose you needed to memorize the definition of the biological term "mammal". "Mammals are warm-blooded animals that give birth to living young, feed them with milk, and are generally covered with fur or hair." Now as you memorize it, also memorize that a cow is a mammal. Picture a cow. Picture its hair, udders, warm blood, and living young calves. Then later if on a test you have forgotten the definition, make your picture of the cow and look over those traits. You will retrieve the definition.

Examples are easy to remember. People who link examples to new words can recall the meanings of new words faster than people who learn definitions only.

Do not just study words and definitions, because it's hard to remember a string of words alone. Students who study this way often have difficulty learning new concepts, especially difficult technical ones. On tests they forget some of the definition.

WHEN MEMORIZING IS DIFFICULT, USE MEMORY TRICKS

Use memory tricks when you want to learn difficult material. Two good ones are the "link" and the "keyword" methods. (They are described in later Study Tips.) Memory tricks speed up learning vocabulary, lists, and unfamiliar ideas. For example, students of the sciences often face hard work as they learn names and symbols for the elements, learn biological and chemical terms, and so on. Other students also have troublesome situations.

Memory tricks are very useful for helping you when you first learn new words to get a handle on them and to use them long enough to become familiar.

REVIEW NEWLY LEARNED INFORMATION LATER

Review a few hours later or a day later. Review by testing yourself.

Your purpose is to fight the natural forgetting that occurs right after learning. A couple of reviews can make learning very lasting.

Don't just reread material because then you won't know if you can recall it for a test. But if you test yourself during your review, you will know what you remember and what you need to study more.

WARNING TO THE READER

Already your memory for these suggestions is fading away. And even if you remember these suggestions, you need to practice them in order to build up new good study habits. So wouldn't it be a good idea for you to keep this study tip, reread it, and practice?

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MEMORY TRICKS CAN MAKE SCHOOLWORK EASIER: SIMILARITIES, THE LINK, AND THE KEYWORD METHOD

OUTLINE ON MEMORY TRICKS

1. Similarities and associations.
2. The link method.
3. Guidelines to making associations.
4. A brief example of the keyword method.
5. The keyword method step by step.
6. An example of using the keyword method.
7. When to use the keyword method.

SIMILARITIES AND ASSOCIATIONS

You can remember any new piece of information if you can associate it to something that you already know.

So when you want to remember new information, try to find something you already know that is similar to it. It can be something about the letters in the words or something in real life. Make yourself stop and think about that relationship. Your purpose is to recall the new item by thinking first of the familiar item that it resembles. You can also work by noticing opposites.

Here are three examples:

1. "Mrs. Harris goes to Paris." The rhyme makes the words similar.

2. "The capital city of the state of Maine is Augusta." Augusta resembles the month of August, which is a hot summer month. But that is opposite to cold wintry Maine. An easy association.

3. You can spell the word "piece" by thinking "a piece of pie." Two similar spellings.

THE LINK METHOD

People often forget lists of items. So use the Link method to recall a whole series of facts that you might forget if you studied separately.

The Link method takes items and converts them into mental pictures and links the picture of each item into a common picture with another item. It often uses ridiculous pictures. So when you see a picture of the first item, it is automatically in the same picture as the next item, and you recall both.

Here is an example. It uses several study methods from another study tip. Suppose you want to recall (1) the distributed study method, (2) warming up your mind, (3) marking your book, and (4) self-testing.

First, distributed studying: Make a silly picture that reminds you of it. How about seeing yourself throw books all around the room? That distributes them.

Second, warming up your mind: Make a picture that reminds you of it, too. How about seeing a match held under a picture of a brain?

Third, now link the distributed books and the warmed-up brain. For example, make your image of throwing books focus on throwing one book at the brain and the lighted match.

Next, marking your book: Make a picture of marking your book that's linked to the match and the warmed up brain. That's easy. Picture the warm brain sticking out a hand that holds a pencil and that marks one of the distributed books.

Finally, self-tests: Link a picture representing a self-test to the marked book. I can make a short mental movie of me seeing a multiple-choice test question and then sneaking an illegal look at my marked book to find the answer. (The fact that cheating is illegal and dangerous makes you remember the image.)

GUIDELINES TO MAKING ASSOCIATIONS

1. Substitute one part of the first object for a part of the second object. In linking fertilizer to petroleum, you could picture a hand holding a gas can and pouring out powdered fertilizer, not gas.

2. Make things out of proportion. Make little things big, big things little. For example, you can remember that the link method causes memory by imagining a person with a gigantic brain that is wrapped around with chain links.

3. Exaggerate the numbers involved or the sizes involved. For example, link lemons to vitamin C by imagining a lemon, cut open, with vast seas (C's) inside with with lots of letter C's swimming in them.

4. Put action in your associations. You can remember that saltwater is a cure for heat exhaustion by picturing yourself pouring a waterfall of salt water over a prone person and seeing the person stand up healthy.

*Many of these ideas come from The Memory Book, by Harry Lorayne and Jerry Lucas. In paperback.

OVER ------>

HOW TO MEMORIZE NEW WORDS WITH THE KEYWORD METHOD

A BRIEF EXAMPLE OF THE KEYWORD METHOD

The keyword method is a way of memorizing a new word and its definition by converting each one into a mental image and then fusing the two images into one picture. For example, a person studying French could use it to memorize that "le chien" means a dog. First, the sound of "chien" is like shin, the front and bottom part of our legs. Next, I make a picture of my "shin" and put a dog biting my leg in the same picture. Presto! New word and definition are linked. Later if I want to recall either one, I think of my image and figure out what I want.

This is a very powerful technique. Researchers recommend it. Even people with bad memories can remember things with it.

THE KEYWORD METHOD STEP BY STEP

1. Understand what the new word means. Do it clearly and fully because it is important. Use good techniques of understanding, such as making visual images of the meaning, talking to yourself about what it means, and thinking how it feels.

2. Take the new word and choose a keyword that rhymes with it. Choose one that you can think of naturally. It is often enough to have it rhyme only partly with the new word. For example, you might take "melancholy" (which means depressed) and use "melon" as a keyword. Always choose rhymes, bad puns, similar sounds.

3. Make a vivid mental image of the keyword. (Don't make a mental image of the original word.) Here's how to make the image vivid: Put in color, shape, one or two details, sounds, physical feelings, movement, or any combination of the above.

4. Now turn to the definition and make a vivid mental image of it.

5. Now make an interactive image out of the two images. The purpose is to make such an integrated image that when you think of one image you see the other.

Here's how to make an interactive image: Put the two images in the same unified picture. Make them relate to each other. For example, the things in one image could touch or hit the other. One image could be put inside the second, one on top of the other, or one a part of the other.

6. Now you test if your images will work. Start with the original word again. Practice thinking of the keyword next, then the keyword's image, then the interactive image, then picking out the image of the definition and translating the picture of the definition into the words of the definition. Continue until it's easy. At this stage you may notice problems. Improve your images if you need to.

7. Now make a backward test. Start with the definition. Practice thinking from the definition in words through the images back to the original word. Practice until you can do it easily.

AN EXAMPLE OF USING THE KEYWORD METHOD

Suppose you need to learn that "der Steg" (a German word) means a footpath.

1. Study both the German and English until you clearly understand the meaning of the words. Get the pronunciation correct. Don't skip this step.

2. Choose a keyword. For example, "steak" sounds close enough to "Steg".

3. Make a picture in your mind of some nice, red, raw, juicy, dinner steaks.

4. Make a picture of a footpath. You could think of one shaded by branches with two children walking along it.

5. Fuse the two images into one. For example, imagine that the children throw several steaks onto the dusty path.

6. Do forward practice. "Der Steg", the word "steak", picture of steak, picture of path, picture of children throwing steaks onto path.

7. Do backward practice. The word "footpath", picture of path, picture of children throwing steaks onto path, focus on steak, word "steak", word "Steg".

WHEN TO USE THE KEYWORD METHOD

When you need to learn new vocabulary words that you would find hard to remember naturally, think of the keyword method. It is good for learning foreign vocabulary and for scientific and technical words.

WARNING TO THE READER

Already your memory for these suggestions is fading away. And even if you remember these suggestions, you need to practice them in order to build up new good study habits. So wouldn't it be a good idea for you to keep this study tip, reread it, and practice?

LANE COMMUNITY COLLEGE
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THINKING: THE ONLY SHORTCUT TO LEARNING

OUTLINE ON THINKING AND LEARNING

1. Reading, reviewing, and thinking.
2. The different ways of thinking.
3. Why thinking creates memory.
4. Nine useful ways of thinking.
5. Use associations to recall forgotten ideas.

READING, REVIEWING AND THINKING

When you think a lot about new information, you will learn it better than if you just reread it or recite it.

Many students know that they should read their assignments, underline or mark important material, review it, and prepare for tests. But, surprisingly, few students know that thinking in easy ways about the facts and ideas creates memory, too.

Repetition works slowly. Some students read and reread new ideas and concepts. That works. But it works slowly and takes several sessions to stamp in memory. Psychologists have run experiments in memorizing words. They find that people who try to remember words by repeating them take longer and forget more than other people who think about links between the words and other ideas.

THE DIFFERENT WAYS OF THINKING

How should you think? When you read a bit of new information, you should think of additional facts and ideas that go beyond the original fact. You should link new ideas with other facts and ideas that you already know. It is also good to link a new fact to other new facts. But you get even better results when you link it to already learned information.

There are many useful things you can think about. Here is a list. People who use even one or two increase their memory.

- Specific examples of the ideas
- Vivid mental images of the ideas
- Details and fine points
- Analogies and similar ideas
- Opposite and contrasting ideas
- General categories that ideas fit into
- Generalizations to other ideas
- Ways to use the ideas to reach goals
- Personal associations

WHY THINKING CREATES MEMORY

Thinking creates memory because it builds associations between ideas.

The many pieces of information in your brain are linked together in chains and networks. Because of the links you can think of one fact, and it will lead you to think of another fact and still another. However, if a certain fact were in your memory, but stood alone, not linked to other facts, you would not be able to recall it. Oddly, people have many millions of bits of information in their brains that they cannot recall because they have only few links to them. So they have lost these facts.

Unfortunately, many students put their textbook information in their minds and never build a structure of links to that information, so they forget it. Students do not intend to forget, but they cause forgetting by using poor study methods.

Each time you take an idea or fact and think from it to other ideas, facts and memories, you build a link. Later you can recall the new idea by thinking of the other ideas.

NINE USEFUL WAYS OF THINKING

Think of Specific Examples of Ideas

Many books give general ideas, broad general principles, large sweeping facts. They are sometimes hard to remember. But when you think of specific vivid examples, you can remember them easily.

For example, students who study sociology learn about social norms, which are rules shared by groups of people. You can remember the definition of norms more easily by thinking of the social norm that automobile drivers should stop at red traffic lights.

Another example: students of English grammar learn that "if a series of three adjectives modifies a noun, place commas after the first two adjectives." You can remember the rule by making up a specific example of a correct sentence that uses the rule. How about this one? "The filthy, decrepit, Victorian house lost a window in a windstorm."

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Make Vivid Mental Images

When you think of examples, use your mental ability to visualize, to see images of the examples. Put in some shape, size, color, and movement. Your images don't need to be perfect. They never are. All they need is to use your mental eyes. Most people remember pictures better than words.

For example, some students of nursing read about a disease, then shut their eyes and vividly imagine seeing a friend sick in a hospital bed on white sheets and showing the symptoms of that disease.

You can add auditory imagery (sounds, spoken words) and kinesthetic imagery (feelings of touch, movements of your body). The nursing students could imagine hearing their friend's voices as they describe the symptoms. They could imagine touching their hot foreheads and feeling the heat of a fever and so on.

You can use kinesthetic images for learning subjects that you might not think of. For example, an Electronics student could do most things well, except read circuit diagrams, those strange diagrams that you have seen on radios and TV's. They stopped him. However, he worked out a way to solve his problem. He pretended that he was an electron flowing through the wires and parts of the circuit. He imagined feeling the forces on him. It created instant understanding.

A math student improved his understanding of graphs and charts by moving his hands up and down to match the line of the graph. And students of literature, psychology, sociology, and history imagine feeling the feelings of people they study.

Mental imagery works. It has power.

Think of Details and Fine Points

As you study a concept very closely and notice its exact features and relate them to the whole thing, you are thinking in useful ways. There is something very powerful about analyzing things into their parts. Read an author's argument and subdivide it into its parts. Read some history and break it into a series of events.

Think of Analogies and Similar Ideas

As you read material, think of similar ideas and facts that you recall. Then compare them. Notice ways that they are alike and different.

For example, two literature students once prepared for a test over several authors this way. They took each author, talked about the writing style, and tried to think of how many ways that author's style was like the others' styles.

Think of Opposite and Contrasting Ideas

This is the flip side of similarities. Take your idea, think of another one that seems different and compare them. Notice both similarity and differences.

Think of General Categories

As you read specific details, think about the big picture. As you read about concepts, link them to the larger categories they fit into. For example, as you read in sociology about folkways, rituals, and laws, you make an effort to place them into the larger category of social norms. The simple act of thinking of the general category will increase your memory for any items that fit into it.

Think How Ideas Generalize to New Examples

This way of thinking gets used when you learn principles, rules, procedures, and scientific laws and want to apply them to new situations. You will learn the principles and read a few examples. You should deliberately think of new examples yourself. For example, this Study Tip tells ways to think about ideas. You should generalize them to your own topics.

Think How to Use Ideas to Reach Goals

Here's a powerful way of thinking because it uses desires and wants. As you learn something, start thinking about (1) things you want and how the new ideas could help you get what you want, and (2) how you can use this new information.

For example, a mechanics student read about motors and thought about types of auto trouble he could fix by using his knowledge.

Think of Your Personal Associations

Most things we read about will bring memories to mind. As you read, let yourself think about those personal things. Notice similarities and differences. Think how your new knowledge lets you see a past event in a new way.

USE ASSOCIATIONS TO RECALL FORGOTTEN IDEAS

When you need to recall a fact and you can't, start thinking about some of the other things you thought about and linked to it. These other ideas may bring it to mind. It's good to do on tests when you don't easily remember ideas.

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WHAT TO DO WHEN YOU DON'T UNDERSTAND WHAT YOU ARE READING

WHAT TO DO TO CLEAR UP CONFUSION

1. When you read along and find a few lines that puzzle you, do NOT stop immediately. Instead, read ahead a few sentences and go back a few sentences. Often the material before and after a passage will help explain it.

2. Think whether it's important to understand the puzzling passage. When it is important, work on it. When it's not important, skip it and read on.

It is NOT important to fully understand a passage if you are scanning it to get a general idea.

It IS important to understand a passage when it talks about things your teacher wants you to learn.

And it IS important when it contains a general principle or basic information that you need to understand later material.

3. Know that there are no easy ways to understand. They all involve more work than reading lightly past the troublesome parts. Accept the fact that you must work harder to understand puzzling parts.

4. When a writer gives examples of concepts and ideas, study them carefully because they relate ideas to things you can relate to. Do not skip over examples.

Also study examples of things that the author says you might confuse with the concept. For example, if an author were teaching the concept of a "mammal", he or she might give examples of mammals like dogs, cows, kangaroos, and humans. Then the author might list things that are not mammals--flies, dinosaurs, sharks, snakes, and maple trees.

When you study examples, think how the traits of the definition show up as features of the examples. For instance, mammals have hair. As you think how dogs fit the mammal category, focus on their fur. Deliberately talk to yourself. Say, "This part of the example fits this part of the concept." "Dogs' fur fits the definition of mammal because mammals have hair."

5. Go slowly! Make mental images of the meanings.

Read again the puzzling part word for word. Do it slowly. Read with exaggerated emphasis. Give yourself time to think of the meanings of all the words. Think of visual images of what the passage means. And if it's appropriate, think of how something feels. Move your hands and arms the way a chart's line moves up or down. Fantasize how it would feel to be the thing that is talked about. For example, how would an electron feel as it moved through each part of a circuit?

6. Talk to yourself! This is important. Most people who are highly intelligent do it. As you move through a puzzling passage, translate it into your words. Do not just stare at the words and sentences without thinking. Do not let your mind be wordless. Think the passage through. Relate it to things meaningful to you. If you are alone, talk out loud. Really! I know people who do it.

7. If there are important words that you do not know and cannot figure out from the context, then stop reading and look them up in the dictionary. If the words are technical words in the course, look them up in the book's glossary. If that does not work, look in the index in the back of the book to find other places the word is used. Look for clues in those pages. It usually helps.

8. Go back to the beginning of the relevant section. Why? Because authors use the beginning of passages to define basic terms and to explain basic information. They build up their explanations step by step. If you can understand the beginning, it is easier to understand the middle. If the part you are reading depends on understanding something much earlier in the book, turn back to it and read it again. Do this especially if you are picking up the book after a period of time and have forgotten some earlier material. Generally, you can review it a lot faster than you first read it.

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9. Break down the puzzling passage into several parts. A passage might contain several steps or several traits of an object. Isolate them, and if possible, take a pencil and mark 1, 2, 3, 4, etc. in the margin or on a piece of paper.

These parts will be related to other facts and ideas in the sections of the chapter. Pick one part and compare it to another part. Ask yourself how they are related. After you get one relationship answered, work on another. After you figure out the relationship of several parts, the mystery will vanish.

What relationships are there? There are many, but the following ones are common:

--Cause and effect
--Whole and its parts
--Object and its traits
--Specific example and its general category.

If a passage puzzles you, search for one or more of these relationships.

10. Draw a diagram. They often make ideas clear. Since you use the visual parts of your brain to make diagrams and look at them, they can increase your comprehension. To show causes and effects, make little boxes in a row, each containing a word for a cause or effect, and draw arrows from causes to effects. To show parts and wholes, draw a rough sketch of an object and mark the parts.

11. Try to figure out the overall framework. This means that you figure out the author's purpose. Perhaps the author is listing four steps, six parts of an explanation, or naming all the effects of an important factor. When you know the framework, it helps.

12. Focus on the parts that you do understand. Then try to see how the part you don't understand can fit in.

13. Make a guess about the meaning of a puzzling part. Keep the guess in mind and reread the puzzling part as if your guess were true. Does it make sense now? If not, try to make a second guess and reread it. Make a third guess.

WHAT TO DO IF YOU CANNOT FIGURE IT OUT

1. If you try and cannot make sense of a passage, then read on. Much of the other material will make sense.

Meanwhile, you can know that your unconscious mind will work on it. Return later to the puzzling part and reread it. I have often found that when I return to a passage later, I understand much more.

2. Mark puzzling passages. When you have to leave a passage still a mystery to you, it's possible that you will get it later. So mark it. Put a big question mark in the margin.

If you do not mark it, you may not find it to study again and may not clear up the problem.

3. Ask someone who might know. Ask teachers, fellow students, friends.

4. If you try several of these techniques and still cannot understand a passage, possibly it is the writer's fault. Some writers write poorly. They leave out assumptions and background information that you need. Other writers make mistakes. When writers fail, readers have no chance. When you wonder if a problem is the author's fault, you should mark the passage with a question mark, read on, and later ask your teacher about it.

5. If you continue to have a lot of difficulty with a book, it is possible that it is just too hard for you at this time. Think whether there is a course that teaches the prerequisite skills. If so, did you take it? If not, perhaps you should take it. Then later after you build up the skills you need, you will find the same book easier.

6. Even if you continue to have difficulty with a book, you can accept the fact that you are truly getting something. In some ways it is better to understand one-half of a good book than to understand nine-tenths of a bad book. Moreover, if you work hard on a difficult book, the experience will improve your reading skills. Then you will understand the next difficult book better.

LANE COMMUNITY COLLEGE
Assessment and Testing

HOW TO TEACH YOURSELF PHYSICAL SKILLS: THE "MIST-STARS" METHOD

INTRODUCTION

This Study Tip is for people who need to learn to do physical skills well. It concerns people learning to play a sport like tennis, to play a musical instrument, to typewrite, to weld metals and hammer nails and clean teeth and drive cars.

"MIST-STARS"--THE MAIN IDEA

The main ideas are embedded in the code word "MIST-STARS". Try to develop Mental Images from your Self and Teachers about STimuli and your right Actions that lead to Results that match the Standards. I'll also say some things about doing lots of practice and about correcting mistakes.

SOME EXAMPLES OF LEARNING PHYSICAL SKILLS

1. From time to time I have tried to learn to play tunes on the piano. Once I tried "Home on the Range." I have heard it sung before and have a mental image of how it should sound, the standard. I could see the notes on the page of sheet music; they are some of the stimuli I see. As I strike the keys with my fingers I am making actions that produce the results of sounds in a poor jerky rhythm with mistakes. I can compare my poor tune (the results) to the real music (the standard) and can plan to correct it and improve. When I learn the tune, I have an inner mental image, a "memory in my muscles."

2. I taught my children to drive cars with stick shifts. It is hard to do. When drivers shift, they do a complex, closely-timed sequence of actions. Their right hand moves the gear shift and their feet press the clutch and accelerator. They must feel the stimuli of their feet's position and hear the stimulus of the engine's speed. As they act, they have to notice the results of the gearshift's position and compare to what it should be, the standard. As they learn to stop jerky shifting, they must notice the result of jerky shifts and compare it to a standard of smoothness. My kids did not always notice, and I had to teach them to feel smooth versus jerky shifting. Once they learned to drive, their mental images came from personal memories of good driving.

WATCH A MODEL TO START LEARNING

- Watch someone good at the skill do it. This can be hard because skilled people move quickly and do many actions. All this complexity is hard for you, as a beginner, to see and understand clearly. Even so, when you see a model acting naturally, you learn a lot because you see their rhythms and action patterns.
- Ask the skilled person to do the action slowly, to break it into little bits. Ask the person to explain what he sees or hears as a signal to act. Ask the model to carefully show the fine points of the actions, to describe how to identify results that match the standard.
- Copy the model. Depending on the actions, you may break them down into natural short bits of movement. When the skill permits it, try to move at the same time the model does. You will learn faster than if you watch first and copy.
- Form vivid memories of the stimuli, actions, results, and standards. You may take notes, study written manuals, examine pictures and view videotapes and anything else useful.
- A common error that both teachers and students make is to focus only on the actions. The reason you should also learn about the stimuli is to know when to act. The reason you should learn about results and standards is to get feedback about your actions and improve them.

HOW TO PRACTICE

1. Set your goal before you practice

Think before you act. Think about your mental image of the teacher first. Try to copy it. The purpose is to give your mind a model to guide your actions.

Choose a part of the skill that you think you can do. Don't try things that are too fast, too long, or too complicated at first. If you try too much, you will make too many mistakes. Plan to do it slowly, only a short part of it, and in a simplified way. Notice that this simplicity means that you set a sub-goal of learning a "beginner's standard." Judge yourself by your own phase of learning.

As you practice, think of your goal as wanting to produce results that match the standard, but also accepting a beginner's standard until your skill improves.

2. Notice feedback. Compare your results to the standard.

After each time you practice your action, pause and notice how well your results matched the standards. This is the time when you get the information you need to make corrections. Use your eyes, ears, sense of touch, and your mind to find the result you produced. You should decide what ways your result matched the standard and what ways it differed. Use your mental image of the teacher in the early phases to compare to.

3. Build mental images. Remember success.

Make new mental images, new memories, of your own actions. You will use these internal images to guide your future actions. Let yourself gradually stop using images of seeing your teacher's actions. You will now have an inner feel for what's right and wrong and can correct errors before they start.

4. Practice to build up your speed and accuracy.

Practice, practice, practice. The more you practice, the more you will learn. This is very important. The ancient law of exercise. You can't practice too much.

Do slow practice sometimes to build up accuracy. It is important to practice slowly even when you are good.

Do fast practice sometimes to build up speed, even if you make mistakes. Fast practice will help you pick up the rhythm, the feel, the pace of normal exercise. Be willing to tolerate mistakes.

Do mental practice after you have memorized mental images of correct actions. Research has proven that people can improve their skills by mental practice -- as long as they avoid practicing doing mistakes.

Caution: Always notice the feedback to your actions. Otherwise, you can accidentally practice mistakes to the point where they become deep habits.

HOW TO CORRECT ERRORS

Often you will develop habitual mistakes in your actions. This will happen even when you "know better." You will intend to change your behavior, but you repeatedly fall right into the mistake again. Here are three cures.

Do slow practice. Slow your practice rate down to a speed that permits you to concentrate fully on what you do in each situation. Practice the correct action and note feedback again and again. As you get it correct, build up speed gradually.

Do practice of sub-skills separately. Practice the problematic skill apart from the other skills. For example, practice one musical chord, one move in football, one sequence of letters in typing.

Practice inhibiting the wrong action. Think of the stimulus that triggers your action, start to do the mistake, stop, say "No", and switch to the correct action. Next move to merely imagining doing the mistake and saying "No" and switching. Next shorten the cycle still further. Build an inhibition against using the wrong behavior.

WARNING: If you build an inhibition, your brain may always need to take an extra half-second to think of the wrong action, stop it, and switch to the correct action. In sports and music you must not waste that time. So always add slow practice and sub-skill practice of the right action.

AVOID SELF-TALK. CONCENTRATE.

During the very early phases of learning a physical skill, you may want to talk to yourself as a way to remind yourself of what to do next. That's okay in the beginning. But as soon as you get past the beginning, you should stop talking to yourself.

Why? People who practice physical skills need to put their full attention on the stimuli and their actions and the feedback. Research on skills shows that people who concentrate without talking learn faster and make fewer mistakes. But people who constantly tell themselves what to do and who criticize themselves are stealing mental space and time that they need to operate their skill with. They make more mistakes.

There are two times it is useful to be quiet mentally: (1) When you watch the stimuli that signal an action (as a tennis player watches the ball coming), and (2) after you have acted and want to notice the results and plan corrections.

So shut your mental mouth.

Remember MIST-STARS. Practice and practice again. You will start clumsy and end up with a smooth automatic skill.

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HOW TO TAKE GOOD CLASS NOTES

WHY SHOULD YOU TAKE NOTES?

If you listen to a lecture and decide not to take notes on it, you must trust in your memory to recall it. When you prepare for a test, you will have nothing written to review with. Can most people remember enough facts from lectures to pass tests several weeks later? "No!" say psychologists who have compared note-takers to listeners.

Why not? Most people can keep information in their working memories for only 15 to 20 seconds unless they recite it or deliberately memorize it. And during lectures people don't have the time to recite and memorize. That means you listen and you understand, but when the lecturer moves on to new topics, you forget. And if that forgetting during a lecture weren't bad enough, more forgetting happens in the hours and days after the lecture. Only 10% of the material may last.

It's better if people take notes and review them later: they can recall about 80% of a lecture.

WHAT MATERIAL SHOULD YOU TAKE NOTES ON?

1. You should set as your top goal to figure out what your teacher wants the students to learn. When you know these goals, you can listen for information that helps you reach those goals. Take notes on anything that will help you learn what the teacher wants the students to learn.

2. Write down the questions teachers ask as well as their answers. Why? The questions often reveal the teacher's goals and objectives. Also the teacher will ask questions on tests, and if you have written the questions in your notes, you can review by asking yourself those questions and reciting the answers. That's the best way.

3. Write down the titles of lists. Why? The title helps you organize the material.

4. Write down general principles: hypotheses, summaries, formulas, cause-and-effect statements, main ideas. Why? You will need them later to help you interpret concrete facts. They're often easy to understand but also easy to forget.

5. Take notes on examples of general principles and concepts. You can be brief. Use just enough words to remind you of the example. Why? When you find a general principle unclear, you can clarify it by studying examples.

6. Write down most new words, concepts, technical terms, and phrases with technical meanings. Why? You will need them constantly, yet they fade fast from short-term memory. So write them down.

7. Copy down diagrams, charts, and tables that summarize information.

8. When a teacher explains chains of reasoning (math proofs, scientific reasons, evidence for ideas, etc.), you should take notes on each step.

WHAT STYLE OF NOTE-TAKING WORKS WELL?

1. The Study Skills Department at Lane Community College recommends that students use the "Cornell system." You draw a vertical line down the page about two and one-half inches in from the left margin. You write your notes in the space on the right. You save the space on the left to use when you review. In it you later write the key words, study questions, and important phrases. It becomes (1) an outline for review and (2) a set of reminders for you to use when you practice reciting the material without looking.

2. Write numbers and letters to separate the major points. But do not try to make a formal outline of a lecture. The reasons are that you will not usually have enough time and most teachers do not speak from formal outlines.

3. Use separate lines for separate ideas. It adds clarity when you review. Let yourself waste space.

4. Draw boxes and circles around related ideas. Underline key words. Draw arrows to connect related information. Use two pens with different colored ink if it adds clarity.

5. Try to be neat.

HOW CAN YOU DEAL WITH A FAST-TALKER?

Occasionally, you will take notes from a teacher who talks so fast that you cannot write fast enough to keep up with the information. Fortunately, this is rare. Most teachers help students take notes. They restate each point several ways. They add examples and they apply points to several situations. They explain things and conclude with summaries. They use extra words and that gives students time to take notes.

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However, when a teacher does talk too fast, you must accept the unpleasant fact that you can only get the high points and that you will miss things. Here's what to do:

1. Write faster. Omit unneeded words. (the, a, and, etc.,). Abbreviate words (w/o for without, acctg for accounting, etc.). Write in phrases, not sentences.
2. Stop trying to spell right.
3. Stop trying to think about the material. Just listen and write. Exception: Sometimes a teacher would prefer that you listen to an explanation of a complicated idea so that you understand it. Then you can stop writing.
4. Make your attention switch back and forth rapidly between your writing and listening to the teacher. You hear an idea, you notice yourself start writing a word or phrase, you put your handwriting on automatic, you switch to listening again while writing, you switch to noticing your writing, and so on. You should try to develop this skill.
5. If you fall behind, then leave a gap of several lines in your notes, skip what you missed, and start in again where the teacher is. After class you can ask another student for what you missed.
6. Tell the teacher about the problem and ask for repetition or for a slower talking speed.
7. Right after class is over when you know you've missed things, try to go over your notes immediately and fill in what you can remember of the missing spots. Add details and examples that you skipped during class. Do not delay doing this. The longer you wait, the more your memory will fade. But if you act fast, you can remember a lot.
8. You may suspect you write too slowly and take too many notes. You can find out by looking at other students' notes.

HOW SHOULD YOU USE NOTES TO REVIEW?

1. Do review them. If you take notes and don't review them, you will forget as much as a person who just listened.
2. Review soon after the lecture. You will remember more than if you wait till later and your memory grows cold.
3. If you use the Cornell system, write key words and questions in the left margin. Then cover the right side, look at the material on the left, and try to recite the full material. Then you should check your memory by looking at the material on the right. If you missed some points, cover it up and try again.
4. If it's possible, try to recite aloud. If not, try to "talk to yourself" silently. Do not mumble in your head. Do not make vague pictures of the answer. Vagueness in review causes poor memory. Since you know you will be tested with words, you need to use clear precise words while you review. (Here is a psychological trick: Look to the left, make a picture of a good friend, and recite your answer to that person. It works.)
5. Think about the meaning of the material. Compare where it is similar to textbook material or different.
6. Hunt for how it is organized.
7. Study the examples until you can tell how the principles are used in them.
8. Use your notes before the next class by rereading them. Why? You will put that information into your working memory and activate the part of your brain that knows that subject. The result will be that you will understand the coming lecture better than if you listened to it cold. Psychologists have proved it.

MISCELLANEOUS ADVICE

1. Should you use a tape-recorder? Not usually necessary, but some people find it helpful. Some people play tapes while driving. If you tape classes, you should still take lecture notes. With a set of notes you can reread the main ideas of an entire lecture in 3 to 5 minutes. Without notes, you need to listen an hour to get the same information.
2. Should you take notes in shorthand? The information that I have says that people who use shorthand do not study directly from their shorthand notes. It's too hard to read them. So they transcribe them into longhand notes. It actually takes them longer. On the positive side they can get very full notes.
3. Should you recopy or retype your notes. Probably not. It wastes time. It won't aid your learning very much. Try to take reasonably neat notes the first time.

WARNING TO THE READER

Already your memory for these suggestions is fading away. And even if you remember these suggestions, you need to practice them in order to build up new good study habits. So wouldn't it be a good idea for you to keep this study tip, reread it, and practice?

7.00

LANE COMMUNITY COLLEGE
Assessment and Testing

HOW TO CREATE A POSITIVE ATTITUDE AND STOP PROCRASTINATING

OUTLINE

1. The problem of discouragement.
2. Recall deep positive goals.
3. Think of specific purposes.
4. Get social support.
5. Think why you believe you can succeed.
6. Think of bad results of not working.
7. Think that time is short.
8. Think that you freely chose to work.

THE PROBLEM OF DISCOURAGEMENT

Several normal things in most students' lives make them feel discouraged every so often. As school goes on, people forget their purposes, they doubt their ability, and they get deeply tired. If you feel discouraged occasionally, too, it's normal. And if you can fight it and keep working, the discouragement won't harm you. Sometimes, however, you may feel so bad that you feel tempted to give up.

It's at times like this that you need to know how to find your natural motivation so that you feel willing to try again. There are ways. Read on.

RECALL YOUR DEEP POSITIVE GOALS

In general, people who have a purpose for doing a task feel motivated to do it. People who lack a purpose and who do a task because they have to do it feel bored and resentful.

1. Call to mind your deep positive goals. Think of why you value them. Now think of how going to school helps you reach them. Next think how taking the troubling course helps attain your goals. Next think of how you could hurt your deep goals if you give in to your negative feelings and skip studying. Finally, use this realization as your emotional energy to want to study. Decide to study.

2. Think of your values. Think of what you stand for, of what limits you will not step over. Think of your ideals and your standards of excellence. With these values in mind, now think of what will happen if you give in to your negative feelings and skip studying. Will it violate your values? If so, use this understanding as the basis for emotional energy to decide to study.

THINK OF SPECIFIC PURPOSES THAT YOU ACCOMPLISH BY DOING THIS HOMEWORK

If you don't set a purpose while studying to find and learn something, you will drift into working for substitute purposes. Students often drift into the purpose to work fast on a homework assignment and finish it soon. If you follow that purpose, your brain will notice less, understand less, and remember less.

- Here are some useful purposes: You will often want (1) to find important information, (2) to understand it, (3) to remember it, and (4) to mentally relate it to other information.
- When you get a specific assignment, try to feel curious about what the information will say. Be specific to yourself. Curiosity is a powerful motive. It is the most natural motive to arouse when you study.
- Let yourself want to master a task. When you feel the mastery motive, you will want to answer what's important in each assignment. Every book, chapter, and section will differ. Figure out important questions; ask yourself; set the goal to hunt the answers. Use your teacher's teaching goals as clues.

GET SOCIAL SUPPORT

Ask someone who knows, "Tell me why doing this homework and going to class is all worthwhile." Listen to what they say.

When we hear other people tell us why it really matters to do something, we believe their reasons more than when we tell ourselves. So find someone who knows, tell them that you will inevitably feel blue and irritated at school from time to time, and that you want them to encourage you. In fact, tell them some things to say to you. They can often have surprising power to help you motivate yourself to work again.

THINK WHY YOU BELIEVE YOU CAN SUCCEED

People who believe that they can succeed are likely to try things. People who expect to fail a task want to avoid it. That means that when you believe that you can succeed in understanding,

OVER

remembering, and solving problems, you will be willing to work.

How can you get support for your self-confidence?

1. Learn how to learn. When you know you can learn, then you can tackle hard subjects. You will know that even though you cannot understand them at first, your repeated efforts will succeeed. Then when your dark doubts sing their dirty songs in your head, you can sing back, "I can learn."

2. Find out if other people have learned the same material before. Find out if anyone with your general amount of intelligence and amount of prior knowledge of the topic has been able to learn it. Ask your teacher. Ask other students. If someone with your ability has succeeded, you know you can, too.

3. Find someone who believes in you and who will tell you so. Say, "I need to be told I'm smart enough to do this."

4. Set reasonable standards to evaluate yourself with. People sometimes expect that they should be able to read material just once and then recall it at will. No! Memory requires deliberate study; skills require much practice. So keep in mind the facts about learning and study. Stop setting perfectionistic standards. Allow yourself to make normal mistakes. Then you will believe you can succeed with study and time.

THINK ABOUT ALL THE BAD RESULTS THAT WILL HAPPEN IF YOU DON'T WORK

If people sit down and think through the good and bad results that they can cause by making their decisions, they avoid bad decisions much more effectively.

As you think about the consequences of putting off your work, think of the past when you delayed work. Later, did you have to do the work in a hurry? If so, did you dislike the pressure? Did you notice that your first decision to delay led to the bad habit of delaying and your problem got greater? If in the past you created bad situations, you will naturally want to avoid that past pain. So use the memory of past pain to decide to study.

Also think about the future. If you follow your negative feelings and avoid your work once, what is likely to happen? If you avoid it repeatedly what may happen? Do you like those results or do you want to avoid them? Know that your decision creates a future. You will live with it. Create only what you want!

THINK THAT TIME IS SHORT

When people think that time is short and that they might run out of time, they feel motivated to work. However, when they think they have plenty of time, they feel relaxed and unwilling to work.

So if you deliberately want to raise your motivation, then think of these things:

--Think about how short the time is before your assignment is due. Be specific.

--Think about how many other activities are competing for your time. Be specific. Include hours of eating and sleeping.

--Think about unknown events that might steal your time.

--Think about the blocks of time that you have available soon that you work in.

Then let yourself act.

REMIND YOURSELF THAT YOU FREELY CHOSE TO TAKE COLLEGE COURSES. AVOID REBELLION.

People who freely chose to do something usually feel they like it. People who are forced into doing something dislike it. They dislike having their freedom to choose taken away from them.

This principle affects students because their teachers give them assignments and require them to do things. Gradually, students forget that they chose to take the course, and they feel resentful. Eventually, they rebel against working.

So if you begin to hate the authority of your teachers, you can cure it by remembering your own choices and goals. Remind yourself that you personally chose to take your courses and that you freely want to do your work.

Don't keep thinking, "I was forced into this" because it leads you to resent your work and to run away from it.

WARNING TO THE READER

Already your memory for these suggestions is fading away. And even if you remember some of them, you need to review them in order to retain them. So wouldn't it be a good idea for you to keep this study tip, reread it, and practice?

LANE COMMUNITY COLLEGE
Assessment and Testing

THE CARE AND FEEDING OF A COLLEGE STUDENT

TO THE STUDENT: Give this Study Tip to a friend, parent or relative.

There is a chance that you may react to long hours of study or difficult courses or other problems by getting discouraged every now and then. Many students do feel discouraged and tempted to give up, yet sadly their friends don't encourage them to keep going.

This Study Tip will teach them sensible ways to encourage you to keep working when you feel discouraged about doing school work.

TO THE STUDENT'S FRIEND:

Probably you got this Study Tip because you are a friend of a college student at Lane Community College. We at the college want our students to succeed. We figure that our students' friends would help them if they knew how. So this message will suggest some things you can do.

We want you to do these things:

1. Watch your friend's degree of willingness to go to class and do schoolwork. If you see your friend get discouraged, then . . .

2. Remember that your goal is to help your student friend to succeed, and . . .

3. Encourage your friend to persist.

The information below tells how.

HOW TO SPOT DISCOURAGEMENT

When you hear a student saying that courses are "too hard" and that he or she lacks the ability to succeed, you're hearing discouragement. Also, discouraged students look tired, depressed, and apathetic--especially when they talk about courses that give them trouble.

However, you can see more subtle signs, too. Discouraged students can try to look cheerful and busy, but they skip classes and put off doing their schoolwork. So if you do not see your student friend studying much, check what's up.

Finally, if you know what situations put stress on students, you can predict discouragement before you see it. Here are some examples:

1. Stress occurs at the start of a term (things are new and look hard);

2. Stress occurs before and after tests (students worry about doing poorly);

3. Stress occurs during big projects (again students worry);

4. Stress occurs during day-to-day dull periods (students feel bored, put off doing their work, and feel guilty).

These clues will help you spot discouragement in your friend. And, of course, because you know your friend, you will know other signs of discouragement.

HOW TO ENCOURAGE: FOCUS ON ABILITY

You probably know that discouraged students usually think they do not have enough ability to succeed in the task that bothers them. You can help discouraged students by reminding them of what their true level of ability is.

1. Start a discussion about past hard projects that your friend has succeeded in doing. Help your friend fully remember how much ability he or she had then.

2. Help your friend remember that at least he or she has the ability to learn. The ability to learn is important in school because often students cannot at first master knowledge and skills, but they can learn by persisting.

3. Tell your friend that you, personally, believe he or she has enough ability. Say it often. Say it in many ways. People feed on their friends' belief in them. They love to hear someone say that they can succeed. (But never lie!)

4. If you are talking to your friend before a big test or project, help your friend break the big task down into its little parts. Help your friend see, one by one, that he or she can do the little parts. That will lessen insecurity.

5. If you are talking to your friend after a failure, help your friend understand all the other causes besides "low ability" that helped cause the failure. Talk about lack of time, difficult external pressures, not enough effort, and not being taught the right techniques. Talk about true excuses!

HOW TO ENCOURAGE: FOCUS ON BACKUPS

Many teachers provide backup help for students. They often wait to be asked by students who need it. So suggest that your friend find out if the teacher can provide such backup as extra books, tapes, tutors, more time, makeup tests, or something else.

OVER ---->

HOW TO ENCOURAGE: FOCUS ON EFFORT AND TECHNIQUES OF STUDYING.

Remind your discouraged friend that there are two other factors that affect success as much as ability does: degree of effort put out and techniques used.

About effort: Many poor students do not realize how hard and long the good students study. If they would study longer, they would succeed better. Encourage your friend to realize that studying longer will lead to more success.

About techniques: Many poor students use inefficient study methods. It has been proven that students who switch to better techniques learn more, learn it faster, and remember it longer. Encourage your friend to realize that he or she can find better methods. Buy a book on studying, take a course on effective learning, get study tips at your college.

Here's a basic tip: After reading a chapter for understanding, study by testing yourself. Pick a fact, look at it, look away, ask the question and recite the answer, look back and check, and do it again until you get it right.

HOW TO ENCOURAGE: FOCUS ON GOALS.

Students get discouraged when they believe that they cannot reach their goals. If their goals are too high, they get discouraged more easily. If they reset their goals to a sensible level, they feel encouraged to work again.

Many students look at big tasks, set a goal to accomplish the whole thing, and feel discouraged. Help your friend to sub-divide the task into bite-size sub-goals that he or she can do one by one.

You should encourage your friend to accept low grades, if necessary. You will need to reassure your friend that it's okay to get lower grades in some difficult situations. When it's impossible to reach a big goal, it's often better to do some work and win a little.

HOW TO ENCOURAGE: FOCUS ON THE VALUE OF LEARNING.

When students get discouraged, they often feel that it's not worthwhile to continue working. Your job, as a friend, is to remind the student that he or she really wants to get the results that come from continued studying. Hint: Don't say studying is valuable. Say the results of studying are worthwhile.

1. Help your friend to remember his or her deep values and goals. Turn your friend's mind back to the beginning of the term, before the trouble began. What were the goals then? All of us have real and deep values within us; help your friend remember. It may be knowledge, beauty, fun, or ability to help others.

2. Talk about the nasty things that the student causes if he or she gives up now. It might be a low grade, the need to repeat a course, dropping out of a program. Count the cost of quitting. Encourage your friend to avoid the troubles that come with quitting.

WHEN NOT TO ENCOURAGE YOUR FRIEND.

We've got to say this next idea: Sometimes students should drop a class. There are situations when it's better not to encourage a student. What are they?

1. Don't encourage if the student finds out that the course content won't reach his or her goals.

2. Don't encourage if the student knows for certain that it's impossible to succeed. For example, the student may lack prerequisite skills, may have a personal problem that prevents spending enough time on a class, or may fall so far behind that it's impossible to catch up.

3. Don't encourage if the student could succeed only by making a horribly massive effort and he or she has decided that the cost is greater than the reward.

If you, as the student's friend, agree that one of these situations really fits, then help the student drop. But your job is to make sure that your friend has not exaggerated the problem. Discouraged people think negatively. They don't believe they have any control at all over a situation.

Your job as a friend is to help your student friend see the reality of what things that they can do, can control, can make happen.

ENCOURAGING YOU, THE FRIEND, TO ACT.

Many of you may ask: "Can I really make a difference?" Yes, research shows that students who have friends and relatives who encourage them succeed much more often than other students. Research shows that even if you encourage "wrong" or do it just a little, it often helps. So act!

LANE COMMUNITY COLLEGE
Assessment and Testing

PERSONAL FAILURE, WORRY, AND SELF-ACCEPTANCE

OUTLINE

1. Purpose
2. The false belief: "There is something permanently wrong with me."
3. The bad effects of the false belief.
4. Five normal school situations that activate the false belief and cause worry.
5. Four normal student behaviors that activate the false belief and cause worry.

PURPOSE

There is a false belief that many people have that causes them to worry more about school. If they fix the false belief, they will worry less. The purpose of this Study Tip is to help you fix it and worry less.

THE FALSE BELIEF: "THERE IS SOMETHING PERMANENTLY WRONG WITH ME."

Let me speak personally to you. From the time I was young, I was convinced that I was very different from other people. I believed there was something wrong with me. I linked the wrongness to the things I could not do as well as other people. For example, I was shy; I could not talk easily and sociably with people; I was poor at sports; and I was not very good looking. I also noticed that I wanted some things which were wrong, and I was bad sometimes in my teachers' eyes and in my parents' eyes. Because of these inadequacies and others, I concluded that I wasn't made right and that other people were better.

I hope you will read carefully and will think about what I mean in a way deeper than the examples and specific words I use. These ideas are hard to express.

I believed that there was something different about me. I thought that I was really an inadequate human being in some deep and permanent ways.

I didn't then think the truth as it seems to me now, namely, "I am a person. I know I have faults. In some ways I am inferior to some people, and in some ways I am superior to some people. But always we are all people together, not better, not worse."

When I grew up, I discovered that many people, perhaps most people, have the same belief deep down inside them, too. I now know that many people are like me in having the same irrational negative belief that they are "wrong" people.

THE BAD EFFECTS OF THE FALSE BELIEF

When you believe that there is something not right about you, it makes normal worries feel more serious. Any little mistake seems to you to be a sign of your great big problem. And you want to solve the big problem of "personal failure" and you often fear that you cannot. You think that mistakes just prove what you fear--that you are a dummy and really an inferior person. It hurts! And that's so big a problem that you think about giving up.

Suppose instead that you believe you are a normal person, not fundamentally inferior. Then when you make a bad mistake, you can say to yourself, "That's okay. Mistakes are natural. I'll try again and sooner or later I'll improve."

Now school and college create lots of situations that activate the false belief. In all learning there are naturally times where students make mistakes, hear a teacher criticize them, are slow to learn, get low grades, and try to learn and have trouble. School is just that way. It is natural. After all, the purpose of school is for students to take courses in which they start out somewhat ignorant of the subject and learn it. It is not possible to have easy successes all the time.

Some of our natural failures and mistakes are caused by teachers and textbooks and normal school problems. Other natural failures and mistakes are caused by our own foolish and careless behavior. Both of these normal causes of trouble can make us worry. And if we are tricked by the false belief and believe that failures and mistakes prove that we are personal failures as human beings, it makes us worry more.

But I can prove to you that there are natural causes of mistakes and that your mistakes and failures and problems in school do not prove that you are a deeply inadequate person. Read the list on the other side of this paper and see how normal it is to make many mistakes in college. Once you know how normal mistakes are, you can accept them and grin and keep working and watch yourself learn and grow and improve.

OVER --->

FIVE NORMAL SCHOOL SITUATIONS THAT ACTIVATE THE FALSE BELIEF AND CAUSE WORRY

1. People make natural mistakes on homework, give wrong answers to teachers' questions, miss some questions on tests, and get some low grades. They do some things right, but the teacher does not seem to notice. Sometimes students ask questions in class that seem like stupid questions to other students. Often students watch other students learn faster than they do. All these problems make students focus on negative facts, problems, and troubles. And if it's you and you believe there is something "wrong" about you anyway, you will feel it more.

2. Some teachers make their courses hard. They require that students do a lot of work. When they demand a lot of work, their students have more trouble and make more mistakes. Yet the students are learning more. So while they learn more, they think they are having more trouble. This trouble activates the belief that "I am wrong" and makes worry worse.

3. When some teachers see students make normal mistakes, they blame the student in a stern critical way. They could have been relaxed and accepting of mistakes, but they are not. Students can feel very embarrassed at hearing criticism, especially if the teacher says it in front of others. That activates the false belief and makes worry worse.

4. Sometimes teachers set up the grading rules for their courses so that every mistake and every failure is important. There are no assignments that are "just for practice". No low grades are forgiven. For example, a teacher might give just two big tests and not ten little tests. That makes each low grade important. Or a teacher might not permit make-up exams and extra-credit work. It causes a natural worry that the false belief makes worse.

5. Some teachers teach poorly. Some textbooks are poorly written. They make it hard for students to find the information, hard to understand it, hard to organize and remember it. It is hard to learn easily. Again, anxiety. Again the false belief that "I am a wrong person" gets activated.

FOUR WAYS A STUDENT'S BEHAVIOR ACTIVATES THE FALSE BELIEF AND CAUSES WORRY

1. Some students put off their studying until the last minute. Some study carelessly and refuse to try hard. These behaviors have two bad effects:

(a) They know that it isn't possible to get very high grades on projects and homework and exams. Worry.

(b) They know they caused their problems. They feel guilty. And it is very troubling for people to know that they have deliberately done something bad--like study carelessly. So people worry about that, and it reminds them of their belief that "I am a wrong person".

2. When students do not know good methods to study effectively, then their poorer methods take a long time. It is likely that they will not learn as much as they need to, and they will make more mistakes than other people do. Anxiety.

3. Some students have a compulsion to be practically perfect and to make no mistakes. When such people do make natural mistakes, they feel hurt worse than do other people who set more reasonable standards for themselves. People with unrealistic standards often believe "I am a wrong person."

4. Some students just do not think it is right or possible to ask for help. Even when they could ask their teachers or counselors or fellow students, they don't. So they feel helpless and isolated. When they encounter a student's natural problems, they feel they have no way to escape failing. Naturally, they worry.

CONCLUSION

Do you see now why problems are so natural in school and college? There are external causes for them beyond your control. Don't blame yourself for things that you cannot control.

Do you see now that even if you cause many of your own problems, it doesn't prove there is something personally wrong with you. Since you can chose to change your behavior, do it! Sure you will have to fight bad habits. Sure it may be hard. Sure you may need help. But don't believe you are permanently spoiled.

--by Dan Hodges

HOW TO TAKE OBJECTIVE TESTS TO GET THE HIGHEST SCORE POSSIBLE

INTRODUCTION

Objective tests are true-false tests, multiple-choice tests, matching tests and fill-in-the-blank tests. You don't write an essay. You have to respond to the choices given to you.

Techniques exist that you can use to get the most out of your knowledge.

However, despite all the information about techniques that you will read, remember that nothing beats studying! People who know their subject are able to get much higher scores on tests than people who are good at test-taking but who do not know the subject. So study!

READ CAREFULLY AND GET THE EXACT MEANING OF WORDS. THIS IS THE MOST IMPORTANT ADVICE.

Read slowly enough that you understand the meaning of everything that your present degree of knowledge allows you to understand.

Read the directions carefully so that you understand them exactly. Do not skip the directions. Follow them!

As you read the test items and the answer options, think of their meanings. There are several ways to know that you understand the meanings. (1) Talk to yourself and translate difficult words into your own words. (2) Make mental images of the ideas. Visualize them. (3) Imagine how things move and feel.

Do not let your worry trick you into reading too fast. Do not skip over confusing phrases. Instead, slow down and figure them out. Do not skim hastily over questions.

ON MULTIPLE-CHOICE TESTS READ ALL OF THE ANSWER OPTIONS BEFORE CHOOSING ONE.

Read all of the answer options on a multiple-choice test before you mark your answer. Why? Because the test might contain two answers that sound good, and only one might be precisely right. You need to check them all.

HOW TO HANDLE A TIME LIMIT

- Check the time allowed and the number of questions. Figure out how many questions you have to answer each minute in order to finish. Try to work at that rate.
- Work first on the questions that are fairly easy.
- Mark the questions that you have not answered and do them later.
- If you finish before the time is up, read over the test again and check your work.
- If some questions are worth more points than others and your time is short, consider doing them first.

HOW TO HANDLE QUESTIONS THAT YOU DO NOT KNOW THE ANSWERS TO

- Find answer options that you are sure are wrong. Eliminate them. Choose one of the remaining ones.
- Check whether two answer options say the same thing in different words. If they do, it means they both must be wrong, unless you are allowed to pick two correct answers.
- Check whether two answer options directly contradict each other. If they do, you know that one must be wrong. Possibly both. Use it as a clue.
- Use key words as clues. Look for:

ALL	ALWAYS	EVERY
MUST	NEVER	NECESSARY
NONE	ONLY	EXCEPT
MAY	OFTEN	GENERALLY
SOMETIMES	SELDOM	PERHAPS

- When you see sentences that claim something is ALWAYS or NEVER true, be suspicious. There might be exceptions. The teacher may be overstating a point to try to trick careless students. It is possible, though it is not certain, that an answer option with a word like that will be wrong.
- On the other hand, when you see sentences that say something is GENERALLY or PERHAPS true, remember that they allow for exceptions and may be right.
- Be careful! Most teachers know that students know about those words. They might try to trick you.

IT IS OKAY TO CHANGE AN ANSWER

Should you change an answer if you are unsure of it? Yes, but not on a whim.

Scientific research proves that people who change answers for a good reason get higher scores than people who stick with the first answer. But be sure you have remembered new information.

SHOULD YOU GUESS WHEN YOU ARE NOT SURE?

Yes, when you are not sure of an answer, you should make a guess.

Why? Because if there are five possible answer options, you have a one-in-five chance of getting it right. If you have ruled out one or two options as wrong, your chances are even higher. But if you do not guess, you have no chance at all. If you guess five times, you may get one or two more right.

Even if the directions tell you that there is a penalty for guessing, you should usually still guess. It will usually improve your score.

Why? Because all that a guessing penalty does is to subtract a certain percentage of wrong answers, and you might be right. The worst that usually happens is that you will come out even. So guess!

HOW TO RECALL FORGOTTEN INFORMATION

Sometimes you will read a question and will recognize that you studied that topic but cannot remember it now. You will almost feel the information there.

Do not focus on that feeling!

Instead, think of things that are associated with the forgotten fact and that you can remember. Think of other facts and concepts. Think of the book you read it in, where you were sitting, and what you were seeing when you learned it. Any sight, sound, feeling, or idea that is associated with the forgotten fact is linked with it and may trigger your memory.

After thinking about related information for a little while, go on to other questions. Your unconscious mind will still search. It may give you the answer later.

HOW TO COPE WITH TIREDNESS, NERVOUSNESS, PAIN AND OTHER STRESS

When people are under stress but can concentrate, they can do almost as well on tests as when they are relaxed and feeling fit. Your mind may wander. But make sure you keep turning your mind to the test questions and to thinking of their meanings and to thinking of associations. As long as you can do that, you have a fair chance of succeeding.

If you are jumpy, use your finger or your pencil to guide your eyes along the words of the questions.

HANDLE MECHANICAL DETAILS CAREFULLY

Mark answers carefully. Don't accidentally mark the wrong answer.

If your teacher has you answer on an answer sheet that will be scored by an automatic scoring machine, make your marks heavy and dark. Do not make stray marks elsewhere on the answer, because the machine may mark them as wrong answers. If you have to change an answer, follow the directions carefully so that the machine does not pick up the answer you changed.

WHAT TO DO IF YOU THINK THE TEACHER HAS MADE A MISTAKE

Sometimes, teachers write bad questions. You may read a question and think there are two answers or no answer. Sometimes, you will see ambiguous wording.

If the teacher permits students to ask questions during the test, you should ask!

You may also write a note to the teacher. (Do not write on a machine-scored answer sheet.) You should explain your thinking. Explain why you chose the answer you did, what it meant to you. Explain why you rejected another answer that may be the obvious choice on the surface, but that contains a trap. If you do this, your teacher may give you part credit even if you are partly wrong.

When the teacher returns the test and reports the correct answers, you may wonder why an answer is correct and why your choice is wrong. It is all right to ask respectfully why the teacher thinks it is correct. Don't be hostile. An honest teacher can either explain it or will admit a mistake.

If you still believe that your teacher has penalized you unfairly and will not change, then consult your school's Student Bill of Rights and make a protest.

GET MORE HELP ON TEST-TAKING METHODS

Take Effective Learning in the Study Skills Department.

Purchase the longer outlines on test-taking skills and test anxiety in the Bookstore.

Buy one of the commercially published books on test-taking skills.

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HOW TO PLAN YOUR TIME SO THAT YOU CAN GET YOUR HOMEWORK DONE

PUT A HIGH PRIORITY ON SCHOOLWORK

Most people's problems with time are really decision problems.

Is your time problem really a result of your choices? Many people put a low priority on their school work because they don't like to study. When they get free time, they choose to do non-school activities that feel important.

Yet they cannot get their work done and they have to work hard at the last minute. They complain they don't have enough time! Wrong! They put a low value on school work. They treat school work as lightly as any sensible person would treat an unimportant activity.

Suggestion: Decide that you feel it is very important to do your school work. Then you will automatically begin to have more time for it.

MAKE A DAILY "TO-DO" LIST

- Write down everything you need to do. Put both school work and other activities on it. Then rate each item's importance.
- Put "A" beside activities that are highly important.
- Put "B" beside activities that are somewhat important, but are secondary in comparison to "A" activities.
- Put "C" beside activities that would be nice to do, but are not as important as the "A's" and "B's".
- Then throughout the day, work on only the "A" activities until they are done.
- Rate most schoolwork as an "A".
- Rate assignments due in the future as "B" or "A" priority.
- Put relaxing time on your "to-do" list.

It is important to give yourself time off to lead a balanced life, except possibly for doing brief periods of intense work. If you do not schedule relaxing times, you may end up hating your work and rejecting it and plunging into nothing but fun activities.

PLAN A SCHEDULE AT THE START OF EACH TERM

Plan a schedule. Include the times each day that you read and do homework. Students who carry a course load of 12 credits will often schedule 10 to 30 hours of homework outside of class each week. A week has 168 hours.

DIVIDE LARGE ASSIGNMENTS INTO PARTS

Analyze the tasks involved in such large assignments as papers and big study projects. Break them into several small parts. Schedule time for each part.

The purpose of this advice is to help you guarantee that you plan enough time to finish a big task. If you do not plan, you may believe that the task is shorter than it really is. Then you will put it off, start it late, and have trouble.

You need three kinds of information to plan this way:

1. What are all the tasks you need to go through to finish the assignment?
2. How long will each task take?
3. What day and time do you need to do each early task in order to make enough time to do the tasks that come afterward?

An example: Suppose you are writing a short paper. The steps are: read the assignment, take notes, think about it, write an outline, write a first draft, edit it, and write a final draft.

If your paper is due Monday, ask yourself when you need to start writing the final draft in order to have time. Next ask yourself when you should edit the first draft in order to allow time to write the final draft. Next ask about writing the first draft. And so on. Work backwards from later steps until you schedule the first step of reading.

As you analyze big assignments, also keep in mind other blocks of time that you need to save for doing other assignments and other non-school activities.

WHEN SHORT PERIODS OF TIME BECOME AVAILABLE, WORK ON SHORT PARTS OF LONGER ASSIGNMENTS.

- Read three pages while waiting for the bus. Write one paragraph for an English paper while waiting for a TV program to start. And so on.
- Do not wait for long blocks of time to come open before you study. The penalty for waiting for long time periods is that you waste lots of short time periods that you could use for studying.
- You may wonder whether people's minds can handle broken-up periods of work. Yes they can. Just give yourself a 1-minute review to warmup your memory for the task.

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LEARN TO SAY "NO" TO PEOPLE WHO TRY TO INTERRUPT YOU

- When people suggest that you do something with them, they do not usually realize how important it is for you to do homework. So as you say "No," explain it to them. If you promise them some time later, they will usually accept it.
- You will have to pay a price in order to manage your time successfully. Some people will feel dissatisfied with you, and you will feel frustrated when you give up doing certain things you like. Are you willing to pay that price in order to get your education? Only you can decide.

DO YOUR MOST DIFFICULT SCHOOL WORK DURING YOUR BEST TIME OF DAY

Many people know that during a certain time of day they can work faster and think more clearly than at other times. Also they know that they are slow or sleepy or grumpy at other times. You should notice what times are good and bad for you.

If you are a "night person", then night is when to write your papers and to read the deep books. Do easier work at another time. If you are a "morning person", use morning for creative work and hard work. You will accomplish more.

Do not do ordinary, routine homework during the time that you are most alert. Save the best time for the hardest work.

START A DIFFICULT PROJECT BY DOING A "FOOT-WETTER" TASK

Some projects look so huge that people find it difficult to start them, so they keep putting them off.

You can often get started by picking out an easy part of it to do, the "foot-wetter." Once you start, you can continue easily.

Schedule a short work-session. The purpose is to make it seem easy, not hard.

Do easy things like: get the books together, take out the typing paper and read the class notes.

You can also find something in the middle of the project to do. You don't need to start at the logical beginning. Many good writers say that they start in the middle and later write the first paragraphs.

THE "WORK FIRST" RULE.
FOR PEOPLE WHO HATE TIME PLANNING.

- Some successful students do not schedule their time at all. How do they do it? They put schoolwork ahead of everything else almost all the time. So they usually get it done.
- The rule: When you have school work waiting, always do it ahead of anything else that is less necessary.
- Don't be silly about this rule. Of course, you can eat, sleep, and mow the lawn on Saturday.
- People who follow this rule never put things off. They don't procrastinate. They start new assignments immediately. Frequently, they get their work all done early and they have free time for play that they can use without feeling guilty. Some people say that the biggest benefit of using the "work first" rule is that you don't feel guilty when you do something else.

ASK FOR SOME HELP IN MANAGING YOUR TIME

- Visit our Study Skills Department. Take part or all of their course, "Effective Learning," because it teaches good time-planning methods.
- Ask a counselor.
- Read a book on the subject. Two good ones are available in paperback editions. They are:

Alan Lakein, How to Get Control of Your Time and Your Life

R. Alec Mackenzie, The Time Trap: How to Get More Done in Less Time.

WARNING TO THE READER

Already your memory for these suggestions is fading away. And even if you remember these suggestions, you need to practice them in order to build up new good study habits. So wouldn't it be a good idea for you to keep this study tip, reread it, and practice?

WHAT MOST INSTRUCTORS EXPECT THEIR STUDENTS TO DO

INTRODUCTION

If you know what your teachers expect, you can adjust how you act toward them and get more out of college. You don't have to do everything teachers expect, but it helps to know. This sheet will tell you what college instructors usually expect.

STUDENT FREEDOM

1. Most college instructors will judge you to be an adult. They usually will not think of themselves as having authority over people. This is not high school or the army. (But you may meet a few instructors still who are authoritarian.)

2. Most instructors know that you and most of the students chose freely to come to college and to take courses. They know that they cannot force or compel students to do things. They know that students have the right to quit whenever they want to. Most instructors accept the fact of student freedom.

3. If you make choices that are bad for your education, most instructors will not interfere. Therefore, you will have a lot of freedom to get into trouble -- and to get yourself out of it. For example, if you cut classes, stop doing assignments, and miss a test or two, most instructors will not try to change your behavior. However, some of them will ask what's happening.

TEACHERS EXPECT THEIR STUDENTS TO DO SOME WORK OUTSIDE OF CLASS.

Many teachers deliberately plan their courses so that you and the other students will do most of your reading and learning outside of class. Of course, teachers vary. You may take courses that do not require outside studying. But that is rare. You should NOT plan to try to get through most courses by simply going to classes and skipping the rest of the assignments, because you won't learn enough to get good grades.

You should plan on doing a few hours reading each week for each course that has reading assignments. And you should plan on needing extra time when teachers require written papers and homework. Finally, you should allow for a few hours of review to prepare for each test.

Many students who get poor grades simply do not realize how hard the students work who get high grades. Some can study 10 to 15 hours a week outside of a difficult class. More for very hard classes! (Most classes are much easier.)

STUDENTS' QUESTIONS IN CLASS

1. Most instructors expect that you will ask questions about the things you don't understand. If you are silent and shy, most instructors will misunderstand you. They will think that they made clear explanations or that you are bored and don't care enough to ask.

2. It is common for students to feel nervous about asking a question in class. They are afraid of asking a "stupid question". They are also afraid of interrupting the teacher's presentation and irritating both teacher and students. The oldest excuse is, "I thought I was the only one who didn't understand and I didn't want to slow down the class." Often several students wonder about the same thing. And generally teachers welcome students' questions.

3. You should ask your questions when they occur to you, unless your teacher says not to. Don't wait. Why? It helps you. It helps the other class members who have the same question. It helps the instructor know how clearly he or she is explaining the ideas.

4. The main thing that you should not do is to ask too many questions or talk about too many things. When you talk, stay on the subject. When students talk too much, they use up the teacher's time and prevent other students from talking, too. However, apart from these warnings, you should talk in class. After all, you are paying good money to buy this knowledge and these skills! So insist on getting your money's worth. If the teacher wants you to lessen the number of questions, let him or her tell you.

VISIT YOUR INSTRUCTOR'S OFFICE

Our college requires most instructors to be on campus a certain number of hours per week and to keep office hours so that students can visit them.

So when you have trouble understanding certain ideas and when you have longer questions that you don't want to ask in class, you should visit the instructor.

It is perfectly right and proper to visit an instructor's office. Most instructors welcome it.

TAKE NOTES IN CLASS

Attend classes. Take notes. Instructors usually give information in class that you will not find in your textbooks. They will expect you to learn things from class lectures and to answer questions on tests. So buy a notebook and take reasonably detailed notes.

Some students misunderstand the way the memory works. They are fooled by the fact that they understand a teacher's ideas, so they think it means that they will remember the ideas. But that is wrong. They forget details, lists of things, complex arguments, and material where it is important to remember the exact wording. So take notes! See the Study Tip on note-taking for suggestions on how to take good notes.

HOMEWORK AND READING ASSIGNMENTS

- Teachers generally expect (and hope and pray!) that you and other students will do your homework and reading assignments on time. A teacher's whole plan of teaching usually depends on the students being up-to-date with their reading. When the students all know a certain background, teaching works best, because the teacher can talk about more complicated material that depends on the students' knowing that background information.
- Students who have not read the assignments have a difficult choice: Either they can just sit quietly and not understand ideas or they can ask about simple facts that they should know already.
- Many teachers give out an outline of the course with the assignments on it during the first class period. Often they will not talk about the assignments after that. Teachers will expect that you will read the outline and will do the assignments, and often they won't remind you about assignments. If your teacher acts this way, don't get fooled and fall behind. Check the outline and do your reading.
- Most teachers expect students to do the homework and take tests on time. Teachers have many different tasks to do. If students do work late, it takes longer for the teacher to grade it fairly because the teacher has to take time reviewing the key ideas and the standards for grading.

Naturally, most instructors will give you some flexibility, and they all recognize that students can face difficult situations which cause them to do work late. So set the goal of doing work on time, but if occasionally you can't, be philosophical about it.

BE AN ACTIVE LEARNER

Teachers expect their students to actively try to learn. They will not expect you to be passive.

What is an active learner? An active learner desires to learn a topic, asks questions and searches for information to answer the questions. Such a student tries to understand new ideas, practices new skills many times, and tries to see how new ideas are connected to each other and to familiar ideas. Active learners try to memorize important principles and information. And such a learner tries to use the new skills and knowledge in real life situations.

But a person who learns passively expects the teacher to pound in the new knowledge. He or she expects wrongly that he or she can relax and listen without thinking.

For example, one of our teachers had a middle-aged man in class who had worked in a factory running a machine. At work he was able to let his mind wander. He could work automatically without paying attention to his work. In college he expected to do the same thing. So he sat back, detached his mind, did not try and did not think. Naturally, he began to get low grades. Fortunately the alert teacher noticed his behavior and explained to him why people cannot learn things unless they become mentally involved. He listened, changed his behavior, and learned rapidly after that.

You can find out how to become an active learner by using the techniques described in these study tips.

WARNING TO THE READER

Already your memory for these suggestions is fading away. And even if you remember some of them, you need to review them in order to retain them. So wouldn't it be a good idea for you to keep this study tip, reread it, and practice?

LANE COMMUNITY COLLEGE
Assessment and Testing

HOW STUDENTS SUCCEED IN COLLEGE-- DESPITE HAVING READING SKILLS THAT ARE BELOW AVERAGE

POOR READERS CAN SUCCEED

We have done research on poor readers at LCC. We have learned that almost all of them who work hard and who take courses to improve their ability are able to get average grades of C or better.

When people practice any skill, they get better at it. So as students practice understanding what they read and as they practice studying effectively, their skills get better.

It takes time to practice. So we have seen that most students who succeeded were people who planned to give themselves time. They took time to practice reading and studying and time to improve. Later, when they could read and study better, they took harder courses and did well.

We have listed below the real methods used by real students who had low reading ability at the time they entered college. Not all students use all of these methods. But they all use some of them.

METHODS THAT LEAD TO SUCCESS

1. Many below-average readers take courses to improve their skills in reading, writing, spelling and math--whatever they need. For example, they take Read, Write, Spell or Reading Comprehension or Basic English Grammar and Sentence Writing or Preparatory English Composition or Basic Math Review or several others.

2. Many students take some easy courses at first. They do not take all hard courses. Some students take courses that do not demand much reading.

3. Many students do not take many courses. Often they take less than 12 credits.

4. They take introductory courses before they take advanced courses.

5. They plan their time carefully so that they have plenty of time to do their homework. Since they know they are below-average readers, they know they need lots of time to study homework assignments.

6. They attend almost all of their classes. They do not skip classes.

7. They take notes in class. Before their tests they review their notes.

8. They read all of their assignments. They try to do their work on time. They avoid falling behind.

9. They study before all tests.

10. When they have questions, they visit their teachers or student tutors.

11. They learn how to study and how to really learn and remember well. Some of them take LCC's course Effective Learning, taught in the Study Skills Department. Others read a book on how to study.

12. During the first or second term, they take one or two courses in which students get to talk together and in which the teachers and counselors can give them help and support. For example: they take Orientation to College or Human Relations or Career Planning or Assertiveness Training.

13. Many of them have trouble at times in college--material they can not understand at first, long hours of study, and some low grades. But they keep going! Later their grades rise. It really happens.

14. They know that they will improve as long as they keep working steadily and seriously. They know that their reading ability will improve as long as they exercise it. So they stay patient during the first few weeks and months, which are the most difficult. Later they find their work is easier.

15. They ask for good advice from people who know what life is like in a college--a counselor at LCC, a teacher, a friend.

LANE COMMUNITY COLLEGE
Assessment and Testing

WHAT IS INTELLIGENCE?
HOW CAN YOU RAISE YOUR OWN INTELLIGENCE?

INTRODUCTION

Modern psychologists believe that part of intelligence is a set of skills. It is possible for people to do exercises that will make them smarter. Just as athletes can practice and improve their skills, so you can practice and get smarter!

WHAT IS INTELLIGENCE?

Intelligence involves two abilities.

1. It means that a person can see relationships between things. When a person looks at particular examples, the person can think of general concepts and principles that link them. And when given general concepts and principles, the person can think of specific examples.

2. It also means that a person can see relationships with abstractions. What are abstractions? They are ideas and concepts about things. They are not the sensations you get directly by seeing, hearing, smelling, tasting and touching things. Instead, they are ideas about common traits that a group of things share.

For example, if you feel one flat desk, your fingers are feeling its flatness, roughness, hardness, etc. Those are sensations. But after you have felt several desks and can think of the general ideas of flatness, roughness, and hardness, you are thinking of abstractions.

For example, if you see a group of people, you have a sensation. But if you think the idea that they are a family, you have formed an abstraction.

SOME EXAMPLES OF THINKING INTELLIGENTLY

1. Here is a problem: "Name three ways that a tree is like an ice cream cone." Here are some of the many possible answers: Both have weight, both are larger than an ant, and both come in different colors.

Did you notice that the answers involve relationships between trees and ice cream cones? The relationships were the three kinds of similarities: weight, size, and colors. Concerning abstractness: When you think of weight, it is abstract, because you have thought of weight as a separate property common to both trees and ice cream cones.

2. Solve this analogy: "A cat is to a kitten as a butterfly is to _____ (fly, moth, caterpillar, mosquito)." The answer is caterpillar because it's a young butterfly like a kitten is a young cat. Notice that you have to think abstractly about adults and youths.

HOW TO RAISE YOUR INTELLIGENCE

The way to raise your inteligence is to practice finding relationships among things and to practice noticing abstractions. The more you practice, the more you will learn. The rest of this Study Tip describes exercises that you can do.

1. Take courses that require you to think. Try to do high-quality work. Courses that only give information or only teach a physical skill will not raise your intelligence much.

2. Read a lot of books. Choose books that challenge your ability to understand them. Slightly hard, but not impossible. Work at trying to understand them. But be sensible. Choose books that are within your present ability--not too hard, not too easy. You can find relationships and notice abstractions in both fiction and non-fiction. Even "junk fiction" can help (romances, spy novels, Westerns).

When you read, think.
Look up words you don't understand.
Work to figure out hard passages.

3. Write a lot. Write descriptions of events that have happened to you and descriptions of things you have seen. Try to make the reader come close to understanding what you have thought and felt. Try to use the best words and most descriptive sentences you can invent. Writing will force you to think of relationships and abstractions.

Write a personal journal or diary.
Write letters to friends.
Write poems and stories and essays.
Take a writing class and work hard.
Keep writing over a long period of time, and your skill will rise.
Study other writers to learn how to write well yourself.
Ask others to comment on your writing. Use their input to improve.

OVER

4. Ask yourself questions and try to answer them. Develop the habit of asking questions about how the real world works and about the similarities and differences between things. Try to answer your questions. Try to test your answers by seeing if they are consistent with other information that you have about the problem.

Even if you cannot answer all your questions, your intelligence will grow because the act of asking questions leads you to notice relationships.

5. Do imaginative reading. Pick a poem or story or article that is somewhat difficult. Get a dictionary. Then read one line. Now look at the important words and try to imagine what each one means. Talk to yourself or write down your thoughts. (Talking and writing help to clarify your thought and are important.)

Look for two things:

(1) What each word means.

(2) How each word relates to the rest of the sentence, paragraph, and where else it applies.

Read the following example and see how to do these things on a line from a poem by William Wordsworth.

"I wandered lonely as a cloud."

Notice that the person is the poet. "Wandered" means that one walks in a path that has no goal; one changes direction from time to time. "Lonely" means being alone and not liking it, wanting company. And it is "lonely as a cloud", not just lonely. "As" means similar to. What is lonely about a cloud? Can you visualize a cloud? Can you see it lonely? Can you imagine Wordsworth walking that way?

- Try hard to be truthful as you interpret the words. Check for accuracy.
- Read out loud and talk out your thoughts when you can. Write them down if you are willing. It focusses your mind.
- When someone else will do imaginative reading with you, it becomes a lot of fun. Take turns. You read a line and interpret it. Then the other person does it. After each one's turn, the other adds ideas.
- Expect your improvement to be slow at first. Don't worry about it. If you do it daily or several times a week for a period of time, you will definitely get smarter.
- It is fun. It is stimulating.

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6. Do mental exercises. There are several systematic ways of thinking that you can practice. They use common relationships that intelligent people often think with.

- An object and its parts.

Think of anything and analyze it into as many parts as you can. Example object: A table. Its parts: Top, 4 legs, braces, plastic covering, molecules, atoms.

- An object and its traits.

Think of anything and think of its traits, characteristics, and qualities. Example object: A table. Its traits: Its colors are green and gray, its texture is smooth, its shape is flat, its temperature feels cool, its shape is square, etc.

- An object and its categories.

Think of anything and try to think of many categories that it fits into. Example object: A puppy. Its categories: young things, dogs, mammals, pets, someone's possession, a living thing, etc.

- A category and specific examples.

Think of any general category and think of many specific instances, examples, and illustrations of it. Example of category: Buildings. Instances of buildings: My white house, the LCC Center Building, the Washington Monument, an igloo, a mud hut, etc.

- A cause and its effects.

Take any event that could cause effects and try to think of many effects. Example of a cause: The eruption of Mt. St. Helens. Effects: The mountain's height was lowered, it dropped ash on cities, it killed people, it made interesting news, it aroused fear, it led to a visit by President Carter, etc.

- An effect and its causes.

Start with any event and try to think of many causes. Example of effect: Mashed potato hit the floor. Causes: A baby threw it, the law of gravity worked, no one grabbed it in time, the baby's eyes saw it, the baby wanted to throw it, the mother had given it to the baby, etc.

7. Work on content that interests you. When ideas interest you, you will find your practice will be fun. And fun will encourage you to keep practicing. The more that you practice finding relationships and abstractions, the more you will be able to think intelligently. Practice, practice, practice.

NOTE: You can take a course called "Thinking Skills" in our Study Skills Department. You can also buy books that help.